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Prevalence of Puerperal Period Reproductive Disorders in Nili-Ravi Buffaloes of Different Parity in District Bahawalpur, Pakistan

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ABSTRACT

The present study was conducted to determine the prevalence rates of various reproductive disorders during puerperal period in Nili-Ravi buffaloes of different parity under field conditions. Data on 587 calvings of Nili-Ravi buffaloes during the period of 2 years was recorded for various puerperal period reproductive disorders like retention of placenta, metritis, endometritis, pyometra and post-partum cervicovaginal prolapse. The data for present study was collected from civil veterinary dispensaries located in district Bahawalpur, Pakistan. Overall prevalence of metritis, endometritis and pyometra was highest during first parity followed by second, third and fourth parity. In the animals belonging to first and fourth parity, there was a high prevalence of metritis followed by endometritis, pyometra, retention of placenta and post-partum uterine prolapse. Among the animals of second parity high prevalence of endometritis was recorded. There was high prevalence of endometritis followed by pyometra, metritis, retention of placenta and post-partum cervicovaginal prolapse during third parity. The prevalence of retention of placenta, metritis and post-partum cervicovaginal prolapse increased with the parity. Proper training and raising awareness among the farmers can minimize the prevalence of these reproductive disorders.

Key words: buffalo, placental retention, metritis, pyometra, prolapse, prevalence

INTRODUCTION

Buffalo plays an important role in the overall economy of Pakistan through contributing milk, meat, hides and draught power for various agricultural operations. This specie is also known as world's second most important milk producing animal (McDowell et al., 1995; Bhatti et al., 2009). Although, buffalo has high economic importance for farmers in Pakistan but there are various reproductive disorders which are creating hindrance in the exploitation of its maximal production potential and thus poor reproductive efficiency remained a major problem of economic concern. Reproductive disorders can lead to economic losses in terms of reduced fertility, low life time production, longer calving interval and increased medication costs in farm animals. (Samad et al., 1987) and ultimately cause complete or partial reproductive failure (Chaudhry et al., 1993). Various reproductive disorders (dystocia, still birth, retained placenta and metritis) have negative impact on the reproductive performance and milk yield of affected animals (Stevenson and Call, 1988).

Increased prevalence of puerperal period reproductive disorders in buffalo is becoming a potential threat to the profitability of dairy farming business by lowering the production and net income. The multitude of reproductive disease conditions like cervicovaginal prolapse, retained placenta and metritis (Bretzlaff et al., 1982) in the early postpartum period, a sequel to

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the stress the lactating animal experience, dwindles the production efficiency and reproductive performance. Some of the important reproductive disorders of buffaloes in Pakistan include retention of foetal membranes, followed by vaginal/ uterine prolapse, anoestrus, uterine infection, dystocia, torsion of the uterus, abortion, vaginal infection and repeat breeding (Durrani and Kamal, 2009). Rabbani et al. (2010) reported total economic losses due to genital prolapse in buffaloes in eight villages of district Faisalabad during 2005-2006 were estimated to be PKR 4,59,500/- and the highest losses were due to mortality of dam (39.17%), followed by milk losses (25.14%), service charges (21.33%) and medicine cost (14.36%).

The reproductive disorders in the livestock could only be minimized when sufficient information regarding reproductive status of the animals is available (Dhanani et al., 1987). Hence the present study was conducted to determine the prevalence of various reproductive disorders during puerperal period in Nili-Ravi buffalo of different parity under field conditions.

MATERIALS AND METHODS

The Study Area

The study was conducted in the District Bahawalpur, Punjab, Pakistan. Geographically, it lays between latitude 29^0 and 59^0 North, longitude 73^0 and 19^0 East, and at an altitude of 461 meters above sea level in the irrigated agro-ecological zone of Punjab. The climate is suitable for agriculture and characterized by four distinct seasons including summer, autumn, winter and spring. In summer, temperature reaches the high forties (°C) during the day and the nights are slightly cooler. Weather conditions reach extremes in both summer and winter. The average temperature in summer is 33 °C and 18 °C in winter with average rainfall is 20 to 25 cm annually. The mean relative humidity is highest in August (81.3%) and lowest in February (34.5%).

Collection of Data

Data were collected from civil veterinary dispensaries located in the district Bahawalpur. The data on 587 calvings of Nili-Ravi buffaloes during the period of 2 years was recorded. Data on the prevalence of various puerperal period reproductive disorders were collected based on the observed clinical signs. These buffaloes were belonging to small holder farmers who practice traditional system of husbandry.

Various puerperal period reproductive disorders like retention of placenta, metritis, endometritis, pyometra and post-partum uterine prolapse were recorded. The reproductive disorders were classified on the basis of parity. Out of the total 587 calvings under the study, the parity wise distribution of calving were 264, 174, 110 and 39 respectively from first, second, third and fourth parity. The parity wise distribution of abovementioned reproductive disorders was also recorded.The nature of reproductive problems was taken according to the following criteria;

Retained placenta

Cases was recorded if fetal membranes were not spontaneously released post parturition (Zahraddeen et al., 2007).

Metritis: Cases in which discharge in animals persists beyond 2 weeks or if the discharge is foul smelling were considered positive for metritis.

Pyometra: It was recorded for the cases that showed persistence of corpus luteum in one or both ovaries.

Uterine Prolapse: Cases in which part or the entire uterus was reversed and protrude out from the cervical canal to the outside of the vulva were considered as cases of uterine prolapse.

The data were computed and analyzed for average, total number and percentage of disorders.

RESULTS AND DISCUSSION

Overall prevalence of metritis, endometritis and pyometra was higher in buffaloes during first parity followed by in second, third and fourth parity, respectively (Table 1). High prevalence of post-partum reproductive disorders with increased lactation number has also been reported by other workers (Jeffery and Edward 1988; Werven et al., 1992). In the present study, prevalence of post-partum reproductive disorders increased with the increase in lactation order which might be due to the increasing production over lactations, resulting in more severe stress (Jeyakumari et al., 2006). In the animals belonging to first and fourth parity, there was high prevalence of metritis followed by endometritis, pyometra, retention of placenta and post-partum cervico-vaginal prolapse. Among the animals of second parity, high prevalence of endometritis was recorded. There was high prevalence of endometritis followed by pyometra, metritis, retention of placenta and post-partum cervicovaginal prolapse during third parity (Table 1).

Table 1 Percentage of puerperal period reproductive disorders in Nili-Ravi buffalo of different parity

	Overall	Parity			
		First	Second	Third	Fourth
Total number of cases studied	587	264	174	110	39
Cases with normal puerperal period	55.02 (323)	61.36 (162)	55.17 (96)	47.72 (52)	43.59 (17)
Cases with puerperal period disorders	44.97 (264)	40.15 (106)	44.82 (78)	52.72 (58)	56.41 (22)
Retention of Placenta	6.64 (39)	7.20 (19)	8.04 (14)	8.18 (9)	10.25 (4)
Metritis	13.80 (81)	10.98 (29)	12.06 (21)	12.72 (14)	17.95 (7)
Endometritis	11.24 (66)	9.84 (26)	13.21 (23)	14.54 (16)	12.82 (5)
Pyometra	9.37 (55)	9.09 (24)	8.04 (14)	13.63 (15)	10.25 (4)
Post-partum uterine prolapse	3.92 (23)	3.03 (8)	3.44 (6)	3.63 (4)	5.12 (2)

Values in parenthesis indicate number of cases

Endometritis and metritis may be resulted from inadequate hygienic conditions during post-partum period, during parturition, retained placenta and traumatic lacerations during dystocia. Abnormal puerperium and poor management are major contributory factors for metritis/endometritis (Noakes et al., 2009). Higher prevalence of metritis and endometritis in these buffalo may be due to as a sequel of post-partum prolapse, retention of placenta, dystokia, handling of prolonged parturition by the unskilled personnel and other bad norms including insertion of tail into the vagina for milk let down.

The prevalence rate of retention of placenta, metritis and post-partum cervicovaginal prolapse increased with the parity (Table 1). These results are in agreement with Jeyakumari et al. (2006). These disorders prone the buffaloes to poor productive performance such as low milk productions

compared to normal healthy animals. Moreover, the occurrence of such disorders has also a negative correlation with the subsequent reproductive health and performance of buffaloes.

In conclusion, during puerperal period, a high prevalence of reproductive disorders was recorded in the buffalo population of the district Bahawalpur which can be minimized by proper training and raising awareness among the farmers.

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